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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/484,835	01/18/2000	Jin Huai	1314.3009	1172

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EXAMINER

PARTON, KEVIN S

ART UNIT PAPER NUMBER

2153

DATE MAILED: 08/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/484,835

Applicant(s)

HUAI ET AL.

Examiner

Kevin Parton

Art Unit

2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by-statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 17-37 is/are pending in the application.
- 4a) Of the above claim(s) 18, 25, and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 17, 19-24, 26-31 and 33-37 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 17, 19-24, 26-31, and 33-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Doshi et al. (USPN 6,130,875) in view of Clarke et al. (USPN 4,967,345).

3. Regarding claims 17, 24, and 31, Doshi et al. (USPN 6,130,875) teach a system for selecting paths through a network with means for:

- a. Identifying a plurality of shortest paths having equal costs from a first node to a second node (column 11, lines 18-20). Note that since a shortest path algorithm is used, if there are multiple shortest paths, they will be found.
- b. Selecting one of the plurality of shortest paths that has an edge disjoint alternate path and is thus protectable (column 10, lines 64-65).
- c. Marking the second node as having a plurality of shortest paths having equal costs (column 12, lines 20-23).

Although the system disclosed by Doshi et al. (USPN 6,130,875) shows substantial features of the claimed invention, it fails to disclose means for:

- a. After marking a node, adding one or more new paths to the set, the new paths extending from the first node through the second node to one or more destination nodes adjacent to the second node.

Art Unit: 2153

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Doshi et al. (USPN 6,130,875), as evidenced by Clarke et al. (USPN 4,967,345).

In an analogous art, Clarke et al. (USPN 4,967,345) discloses a system for selecting from a plurality of shortest paths to a network element with means for:

- a. After marking a node, adding one or more new paths to the set, the new paths extending from the first node through the second node to one or more destination nodes adjacent to the second node (column 6, lines 20-24; figure 9-10). Note that in the reference, multiple paths were found to node 'E', it was marked, and then a path to a node adjacent to 'E' was found.

Given the teaching of Clarke et al. (USPN 4,967,345), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Doshi et al. (USPN 6,130,875) by employing the addition of a node adjacent to the marked node. This is inherent in the calculation of a shortest paths tree and benefits the system by giving a map of all nodes that can be reached via that node.

4. Regarding claims 19, 26, and 33, although the system disclosed by Doshi et al. (USPN 6,130,875) (as applied to claims 17, 24, and 31, respectively) shows substantial features of the claimed invention, it fails to disclose means for examining the parent node of each of the plurality of shortest paths, and identifying the selected shortest path to be the one for which the parent node has not been parked, the parent node being a last node before the second node on any path.

Art Unit: 2153

Nonetheless, these features are well known in the art and would have been an obvious modification of the system disclosed by Doshi et al. (USPN 6,130,875), as evidenced by Clarke et al. (USPN 4,967,345).

In an analogous art, Clarke et al. (USPN 4,967,345) discloses a system for selecting from a plurality of shortest paths to a network element with means for examining the parent node of each of the plurality of shortest paths, and identifying the selected shortest path to be the one for which the parent node has not been parked, the parent node being a last node before the second node on any path (column 6, lines 20-25).

Given the teaching of Clarke et al. (USPN 4,967,345), a person having ordinary skill in the art would have readily recognized the desirability and advantages of modifying Doshi et al. (USPN 6,130,875) by employing examining a parent node to determine if a path is edge disjoint. This benefits the system because the determination of a protectable path is only dependent upon the evaluation of the preceding node, thus decreasing computation time and storage requirements.

5. Regarding claims 20, 27, and 34, Doshi et al. (USPN 6,130,875) teach all the limitations as applied to claims 19, 26, and 33, respectively. They further teach means for using the set of paths in the computation of a shortest path tree (column 12, lines 9-23). Note that a shortest path tree will necessarily be constructed.

6. Regarding claims 21, 28, and 35, Doshi et al. (USPN 6,130,875) teach all the limitations as applied to claims 17, 24, and 31, respectively. They further teach means wherein each of the shortest paths comprises either an individual path segment or a plurality of contiguous path segments, each of the path segments comprises an individual link or a plurality of contiguous

Art Unit: 2153

links, and each of the links comprises a communications channel between two adjacent nodes (column 9, lines 35-44; column 12, lines 9-11).

7. Regarding claims 22, 29, and 36, Doshi et al. (USPN 6,130,875) teach all the limitations as applied to claims 17, 24, and 31, respectively. They further teach means wherein the equal costs are determined in accordance with a cost metric defined for the links of the network (column 12, lines 9-11).

8. Regarding claims 23, 30, and 37, Doshi et al. (USPN 6,130,875) teach all the limitations as applied to claims 17, 24, and 31, respectively. They further teach means wherein at least one of the plurality of shortest paths was found in preceding computations in developing a shortest path tree (column 12, lines 9-23). Note that in the reference, the shortest primary path is found first.

### *Conclusion*

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

Art Unit: 2153

however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin Parton whose telephone number is (703)306-0543. The examiner can normally be reached on M-F 8:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenton Burgess can be reached on (703)305-4792. The fax phone numbers for the organization where this application or proceeding is assigned are (703)746-9242 for regular communications and (703)746-7238 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703)305-3900.

Kevin Parton  
Examiner  
Art Unit 2153

ksp  
August 4, 2003



KRISNA LIM  
PRIMARY EXAMINER